Weekly Report POS537_2

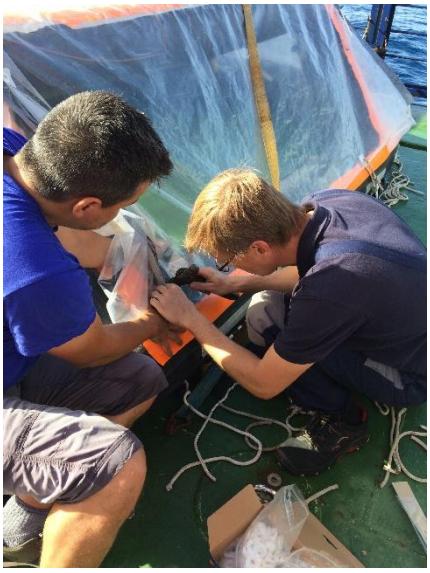
21st September 2019, Saturday

After a successful one day mesocosm on Friday, we had to postponed three days mesocosm due to incoming bad weather. With the help from the crew, all mesocosm were successfully recovered onboard. Mesocosm had minor damage and need to be repaired.

22nd September 2019, Sunday

Weather condition was not permitting to deploy any mesocosm or small boat. But we used time wisely to repair the damages on the mesocosm. All scientist worked together as a team to repair the damage, by making new eye lids and learned new knots to secure the UV foils.

As a backup plan for a bad weather, we also did an alternative incubation experiment onboard to look at photolysis of TEPs. 20 Liter of bulk water was collected from the ship using bucket, pre-filtered through 200 µm and 50 µm filters to remove any predators and phytoplankton, and filled into 1 Liter cubicle bottles. The bottles were incubated with dark, UV transmitting and UV radiation treatments. Samples for TEP, optical density and flow cytometry were measured from each bottles every day after sunset.



Preparing new eye lids for UV foils (photo: Mustaffa NIH)

23rd September 2019, Monday

Planktology team measure daily the optical density from their phytoplankton incubation experiment. However, no apparent growth was observed so far. The weather was still bad postponing mesocosm deployments or sampling from a small boat. Meanwhile other scientists involved in the TEP incubation experiment sampled and filtered the water for their measurements.

24th September 2019, Tuesday

We went out on a small boat to sample high volume natural sea surface (SML) for RNA and DNA analyses. Together with the SML, seawater from 20 cm and 1 meter depths were sampled as reference.

SML sampling from a small boat. (Photo: L. Jeager)

25th September 2019, Wednesday

Bad weather day. Scientists took their time to rest, recovered from sea sickness or got prepared for upcoming mesocosm experiment. Meanwhile after sunset, scientists who involved in TEPs incubation experiment sampled and filtered the seawater for their measurements.

26th September 2019, Thursday

The weather is on our side today. All six mesocosm were successfully deployed. The sea surface water and bulk water at 1-meter depths were collected at three time points daily. Scientists take turns to go on the small boat and experience surface water sampling inside the mesocosm.

Calm sea and all mesocosm in the water for 2 days' experiment (photo: Mustaffa NIH)

After lunch, manta net was deployed to collect zooplankton at the surface water. Approximately 100 of blue copepods were collected and sorted accordingly in the dry lab. We thank the bridge for their flexibility to deploy manta net allowing for effective use of the time of calm seas.

27th September 2019, Friday

Second day of mesocosm experiment. The sampling activity went smoothly as planned. Mesocosm were left overnight and final sampling will be done on the next day.

After lunch, the CTD was deployed to collect water from 5-meter depth for 24 hours' zooplankton incubation experiment. The zooplankton collected from previous day were incubated in the surface and subsurface water (5 meter) and left under UV transmitting and UV radiation treatments for 24 hours.

28th September 2019, Saturday

Morning sampling was cancelled due to higher wind speeds. After lunch, we finally went out for a final sampling followed by mesocosm recovery. Meanwhile in the wet lab, scientists were all busy filtering samples from mesocosm and 24 hours' zooplankton incubation experiment.

We are now steaming towards Barcelona to drop off Oliver.

Despite having a bad weather week, we had a good trip so far. We thank the bridge for their flexibility and the crew for always give their best to ensure the mesocosm deploy smoothly. Another week to go, we will make most out of it.